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PARACHUTE RIGGER QUESTION BOOK

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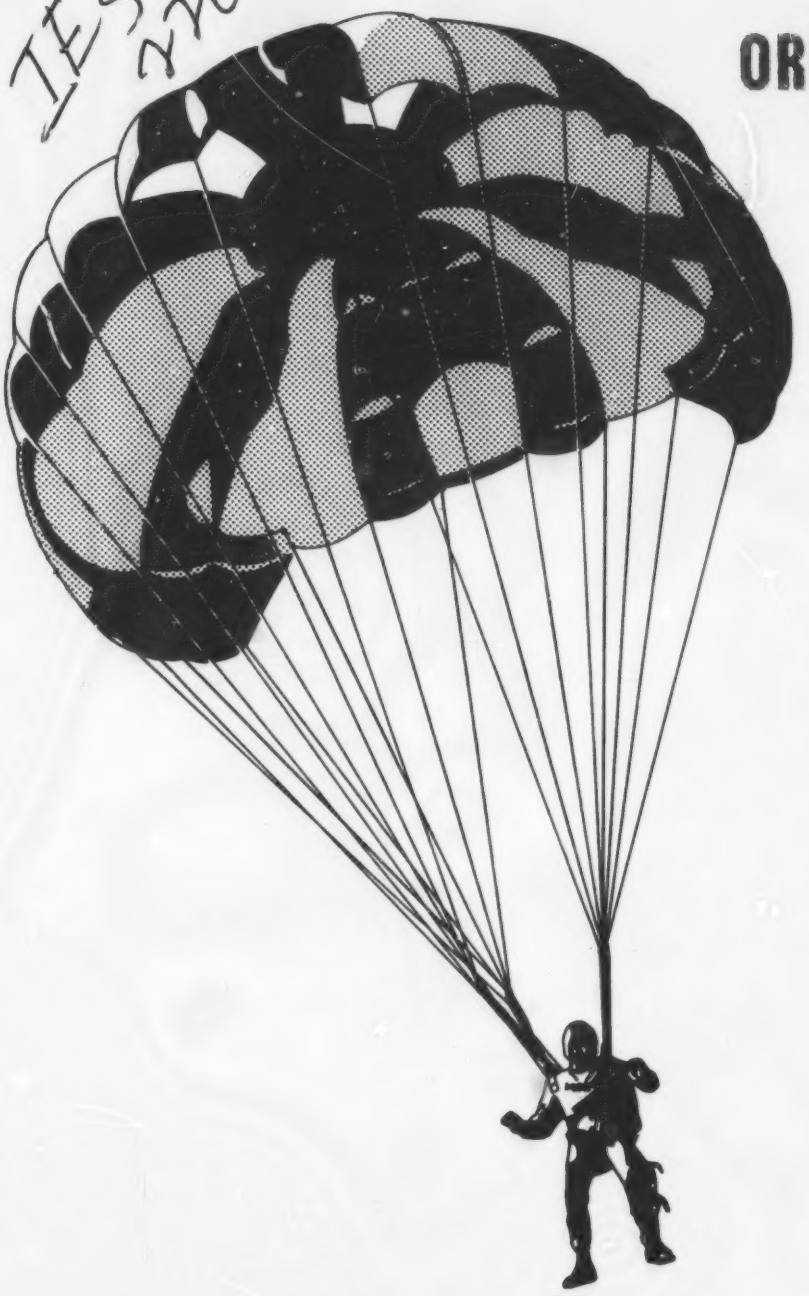

U.S. Department of Transportation
Federal Aviation Administration

Expires September 1, 1988

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PARACHUTE RIGGER

Question Book

1986

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Aviation Standards National Field Office

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

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MAXIMUM TIME ALLOWED FOR TEST:

A. Senior or Master Rigger — 2 HOURS.
B. Senior Rigger (Military Competence) — 1 HOUR.

Materials to be used with this question book when used for airman testing:

1. Airman Written Test Application which includes the answer sheet.
2. Question Selection Sheet which identifies the questions to be answered.

GENERAL INSTRUCTIONS

1. Read the instructions on page 1 of the Airman Written Test Application and complete the form on page 4.

2. The question numbers in this question book are numbered consecutively beginning with No. 2001. Refer to the question selection sheet to determine which questions to answer.

3. For each item on the answer sheet, find the appropriate question in the book.

4. Mark your answer in the space provided for that item on the answer sheet.

5. Remember:

   Read each question carefully and avoid hasty assumptions. Do not answer until you understand the question. Do not spend too much time on any one question. Answer all of the questions that you readily know and then reconsider those you find difficult.

   If a regulation is changed after this question book is printed, you will receive credit until the affected questions are revised.

The minimum passing grade is 70.

WARNING

§ 65.18 Written tests: cheating or other unauthorized conduct.

(a) Except as authorized by the Administrator, no person may—

(1) Copy, or intentionally remove, a written test under this Part;

(2) Give to another, or receive from another, any part or copy of that test;

(3) Give help on that test to, or receive help on that test from, any person during the period that test is being given;

(4) Take any part of that test in behalf of another person;

(5) Use any material or aid during the period that test is being given; or

(6) Intentionally cause, assist, or participate in any act prohibited by this paragraph.

(b) No person who commits an act prohibited by paragraph (a) of this section is eligible for any airman or ground instructor certificate or rating under this chapter for a period of one year after the date of that act. In addition, the commission of that act is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

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PREFACE

This question book has been developed by the FAA (Federal Aviation Administration) for use by applicants who are preparing for the Parachute Rigger Written Test and also for use by FAA Testing Centers and FAA Designated Written Test Examiners in administering the test. It is issued as FAA–T–8080–9, Parachute Rigger Question Book, and is available to the public from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

or from U.S. Government Printing Office Bookstores located in major cities throughout the U.S.

The questions included in this publication are predicated on regulations, principles, and practices that were valid at the time of publication. The question selection sheets prepared for use with this question book are security items and are revised at frequent intervals.

The Federal Aviation Administration does not supply the correct answers to questions included in this book. Students should determine the answers by research and study, by working with instructors, or by attending ground schools. The Federal Aviation Administration is NOT responsible for either the content of commercial reprints of this book or the accuracy of the answers they may list.

Comments regarding this publication should be directed to:

U.S. Department of Transportation
Federal Aviation Administration
Aviation Standards National Field Office
Examinations Standards Branch
Airworthiness Section, AVN–133
P.O. Box 25082
Oklahoma City, Oklahoma 73125

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INTRODUCTION

The requirements for a parachute rigger certificate and ratings, and the privileges, limitations, and general operating rules for certificated parachute riggers are prescribed in Federal Aviation Regulations Part 65, Certification: Airmen Other Than Flight Crewmembers. Any person who applies and meets the requirements is entitled to a parachute rigger certificate.

At FAA Testing Centers, or at an FAA Designated Written Test Examiner's facility, the applicant is issued a "clean copy" of this question book, an appropriate 50-item question selection sheet which indicates the specific questions to be answered, and AC Form 8080-3, Airman Written Test Application, which contains the answer sheet. The question book contains all the supplementary material required to answer the questions. Supplementary material, such as an illustration, will normally be found within one page of the question with which it is associated. Where this is not practicable, page reference numbers will be given.

THE WRITTEN TEST

Questions and Scoring

The test questions are of the multiple-choice type. Answers to questions listed on the question selection sheet should be marked on the answer sheet of AC Form 8080-3, Airman Written Test Application. Directions should be read carefully before beginning the test. Incomplete or erroneous personal information entered on this form delays the scoring process.

The answer sheet is sent to the Mike Monroney Aeronautical Center in Oklahoma City where it is scored by a computer. Shortly thereafter AC Form 8080-2, Airman Written Test Report, is sent to the applicant listing the score and test questions missed.

The applicant must present this report for an oral and practical test, or for retesting in the event of written test failure.

Taking the Test

The test may be taken at FAA Testing Centers, FAA Written Test Examiners' facilities, or other designated places. After completing the test, the applicant must surrender the issued question book, question selection sheet, answer sheet, and any papers used for computations or notations, to the monitor before leaving the test room.

When taking the test, the applicant should keep the following points in mind:

1. Answer each question in accordance with the latest regulations and procedures.
2. Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
3. After formulating an answer, determine which of the alternatives most nearly corresponds with that answer. The answer chosen should completely resolve the problem.
4. From the answers given, it may appear that there is more than one possible answer; however, there is only one answer that is correct and complete. The other answers are either incomplete or are derived from popular misconceptions.
5. If a certain question is difficult for you, it is best to proceed to other questions. After the less difficult questions have been answered, return to those which gave you difficulty. Be sure to indicate on the question selection sheet the questions to which you wish to return.
6. When solving a computer problem, select the answer nearest your solution. The problem has been checked with various types of computers; therefore, if you have solved it correctly, your answer will be closer to the correct answer than to any of the other choices.
7. To aid in scoring, enter personal data in the appropriate spaces on the test answer sheet in a complete and legible manner. Enter the test number printed on the question selection sheet.

Retesting—FAR 65.19

Applicants who receive a failing grade may apply for retesting by presenting their AC Form 8080-2, Airman Written Test Report—

(1) after 30 days from the date the applicant failed the test; or

(2) the applicant may apply for retesting before the 30 days have expired upon presenting a signed statement from an airman holding the certificate and rating sought by the applicant, certifying that the airman has given the applicant additional instruction in each of the subjects failed and that the airman considers the applicant ready for retesting.

VIII

APPENDIX 1

2001. How many years experience (minimum) as a parachute rigger are required for an applicant to be eligible for a Master Parachute Rigger Certificate?

1—2 years.
2—3 years.
3—5 years.
4—7 years.

2002. In addition to other qualifications, an applicant for a Master Parachute Rigger Certificate shall show evidence of having packed satisfactorily a minimum of

1—50 FAA-approved parachutes within the preceding 24 calendar months.
2—100 parachutes of each of 2 types in common use.
3—20 parachutes of each type for which a rating is desired.
4—100 FAA-approved parachutes within the preceding 12 calendar months.

2003. In accordance with FAR Part 65, which statement shown below is an eligibility requirement for a Senior Parachute Rigger Certificate?

1—Must be a United States citizen.
2—Must be able to read, write, speak, and understand the English language.
3—Must be eligible for at least a Third-Class Medical Certificate.
4—Must have packed at least 100 parachutes.

2004. An applicant for a Senior Parachute Rigger Certificate must have packed a minimum number of parachutes under the supervision of which of the following?

1—Any certificated parachute rigger.
2—A person holding a currently effective parachute instructor's certificate.
3—A certificated and appropriately rated parachute rigger or a person holding an appropriate military rating.
4—A certificated master parachute rigger who also holds a currently effective parachute instructor's certificate.

2005. How many of the following are included in the knowledge requirements for a Senior Parachute Rigger Certificate?

(1) The sections of FAR Part 65 that relate to parachute rigger certificates.
(2) The use of the parachute.
(3) The construction, packing, and maintenance of the parachute.
(4) The manufacturer's instructions relating to parachutes in common use.

1—Two.
2—One.
3—Three.
4—Four.

2006. How many parachutes must an applicant for a Senior Parachute Rigger Certificate show that he/she has packed?

1—100 parachutes of each type for which a rating is sought.
2—20 parachutes each of two types in common use.
3—20 parachutes of each type for which a rating is sought.
4—40 parachutes of each type for which a rating is sought.

2007. What is the minimum period of time an applicant for a Senior Parachute Rigger Certificate shall have served as a parachute rigger?

1—There is no minimum time period specified.
2—For at least 90 days within the preceding 12 months.
3—2 years.
4—5 years.

2008. Which of the following is an eligibility requirement for a Master Parachute Rigger Certificate?

1—Be at least 18 years of age.
2—Be at least 21 years of age.
3—Be at least 16 years of age.
4—There is no minimum age requirement.

2009. An applicant for a Master Parachute Rigger Certificate must have packed a minimum number of parachutes either as a senior rigger or under the supervision of which of the following?

1—Any certificated parachute rigger.
2—A person holding a currently effective parachute instructor's certificate.
3—A certificated parachute rigger who holds the appropriate ratings or a person holding an appropriate military rating.
4—A certificated master parachute rigger who also holds a currently effective parachute instructor's certificate.

2010. A senior rigger, who had held a back type rating for 6 years, added seat and chest type ratings to the Senior Parachute Rigger Certificate on a given date. One month later, upon meeting the experience requirements for a master rigger, the senior rigger applied, was tested, and was issued a Master Parachute Rigger Certificate. For what type ratings is the master parachute rigger eligible?

1—Back, chest, and seat types.
2—Back type only.
3—Only the types for which he/she packed at least 100 parachutes and was tested for on the master rigger test.
4—Back type and either chest or seat types, depending upon the master rigger test.

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2011. Which statement is correct in reference to the skill requirements for a Senior Parachute Rigger Certificate?

1—An applicant must demonstrate the ability to pack and maintain at least one type of parachute in common use.
2—An applicant must demonstrate the ability to pack and maintain two types of parachutes in common use.
3—An applicant who has a record of packing at least 20 parachutes of the type for which a rating is sought meets the skill requirements and is not required to take an oral and practical test.
4—An applicant who has a record of packing at least 100 parachutes of each of two types in common use meets the skill requirements and is not required to take an oral and practical test.

2012.
(1) The requirements for a Master Parachute Rigger Certificate specify that an applicant shall have had at least 5 years of experience as a certificated senior parachute rigger.
(2) If not the holder of a Senior Parachute Rigger Certificate, an applicant for a Master Parachute Rigger Certificate must pass a written test.

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2013. Federal Aviation Regulations provide for the issuance of which type ratings for parachute riggers?

1—Seat, special purpose, back, and lap.
2—Chest, back, seat, and chair.
3—Lap, chest, chair, and cargo.
4—Back, lap, seat, and chest.

2014. In addition to other qualifications, which requirement must be met by a member of an Armed Force of the United States who applies for a Master Parachute Rigger Certificate, and is not the holder of a Senior Parachute Rigger Certificate?

1—Pass a written test and, in addition, pass an oral and practical test for each rating sought.
2—Pass a written, oral, and practical test for each rating sought.
3—Pass a written test with respect to two types of chutes in common use.
4—Present evidence to the FAA showing that he/she holds the equivalent military rating.

2015. What is the age requirement for an applicant to be eligible for a parachute rigger certificate?

1—At least 18 years of age.
2—At least 21 years of age.
3—At least 18 years of age for the Senior Parachute Rigger Certificate and at least 21 years of age for the Master Parachute Rigger Certificate.
4—There is no FAR requirement concerning age for the issuance of a parachute rigger certificate.

2016. Which statement is correct in reference to the test requirements for a Senior Parachute Rigger Certificate when the applicant is an eligible military rigger?

1—Pass a written, oral, and practical test.
2—Pass a written and practical test.
3—Pass an oral and practical test.
4—Pass a written test.

2017. If a certificated master parachute rigger applies for an additional type rating, how many (minimum) parachutes of the type for which he/she seeks a rating must he/she have packed?

1—20 parachutes.
2—100 parachutes.
3—50 parachutes.
4—There is no minimum number specified by regulation.

2018. What requirements must be met by an eligible member of an Armed Force of the United States who applies for a Senior Parachute Rigger Certificate?

1—Pass an oral and practical test for each rating sought.
2—Pass a written test with respect to Federal Aviation Regulations.
3—Present evidence to the FAA that he/she holds an appropriate military rating.
4—Pass a written test, and an oral and practical test for each rating sought.

2019. A certificated parachute rigger who applies for an additional type rating must pass

1—a written and practical test.
2—a written and oral test.
3—an oral and practical test.
4—a practical test.

2020. Which of the following is not a requirement for issuance of a Senior Parachute Rigger Certificate to an applicant who is a civilian employee (parachute rigger) of an Armed Force of the United States.

1—Be at least 18 years of age.
2—Show evidence of having packed satisfactorily at least 20 parachutes of each type for which he/she seeks a rating.
3—Pass an oral and practical test, to the satisfaction of the Administrator, showing his/her ability to pack and maintain at least one type of parachute in common use.
4—Present satisfactory documentary evidence that he/she is a civilian employee (parachute rigger) of an Armed Force of the United States.

2021. A certificated senior parachute rigger who applies for an additional type rating must take which of the following tests?

1—Written test.
2—Practical test.
3—Written and practical tests.
4—Written, oral, and practical tests.

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2022. A certificated master parachute rigger who applies for an additional type rating must pass which of the following?

1—A written and practical test for each type rating sought.
2—An oral and practical test for each type rating sought.
3—A practical test for each type rating sought.
4—A written test for each type rating sought.

2023. When a certificated senior parachute rigger applies for an additional type rating, how many parachutes must he/she have packed?

1—There is no minimum number specified by regulation.
2—At least 10 parachutes of each of two types in common use.
3—At least 20 parachutes of the type for which a rating is sought.
4—At least 100 parachutes of each of two types in common use.

2024. Select the correct statement regarding the privileges of a certificated parachute rigger.

1—When packing the main parachute of a single harness dual parachute pack to be used for intentional jumping, all packing operations shall be conducted in a certificated parachute loft rated for packing and general maintenance.
2—There are no regulatory requirements that must be followed when packing the auxiliary parachute of a single harness dual parachute pack to be used for intentional jumping.
3—A certificated parachute rigger shall conduct all packing operations in a certificated parachute loft.
4—When packing the main parachute of a single harness dual parachute pack to be used for intentional jumping, a certificated parachute rigger is not required to keep a record of the packing or to seal the pack.

2025. Which of the following repairs can be approved by a certificated senior parachute rigger?

A. Replacing a grommet.
B. Cleaning a stained harness.
C. Replacing suspension lines.
D. Arranging suspension lines in proper sequence on a separable link.
E. Repairing a lateral band.
F. Replacing an apex cap.

1—A, C, F.
2—B, C, E.
3—A, B, D.
4—E, D, F.

2026.
(1) Worn or damaged harness webbing may be replaced by a certificated senior parachute rigger, providing he/she has the necessary equipment.
(2) The replacement of a damaged suspension line is classified as a major repair.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2027.
(1) If the suspension lines were found to be out of rotation on a quick removal link, it would constitute a minor repair to slip the lines off the link and replace them in the proper sequence.
(2) The pilot chute bridle cord may be retied or replaced as a minor repair.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2028. Which of the following may pack, maintain, and alter a chest type parachute intended for emergency use in connection with civil aircraft?

1—A certificated and appropriately rated master parachute rigger.
2—A certificated and appropriately rated senior parachute rigger.
3—Any rigger who has the necessary equipment.
4—The owner of the parachute.

2029. What are the privileges of a certificated senior parachute rigger, in addition to supervising other persons in packing any type of parachute for which he/she is rated?

1—May pack or maintain (except for major repair) any type of parachute for which he/she is rated.
2—May pack, maintain, inspect, and perform major and minor repairs on any type of parachute for which he/she is rated.
3—May pack or maintain (except for major repairs) and perform alterations on any type of parachute for which he/she is rated.
4—May pack, maintain, inspect, and perform major and minor repairs on any type of parachute for which he/she is rated, and instruct others in performing these operations.

2030. Who may pack the main parachute of a dual parachute pack to be used for intentional jumping?

1—A certificated parachute rigger or the person who is to use the parachute.
2—Any person associated with use of the parachute for intentional jumping.
3—Only a certificated and appropriately rated parachute rigger.
4—Only a certificated parachute rigger.

2031. Who may pack, maintain, and alter a back type parachute intended for emergency use in connection with civil aircraft?

1—A master parachute rigger or the parachute owner.
2—A certificated parachute rigger who has the necessary equipment.
3—A certificated and appropriately rated senior parachute rigger.
4—A certificated and appropriately rated master parachute rigger.

2032. The privileges of a person holding a Senior Parachute Rigger Certificate are contained in one of the following?

1—Maintain, pack, inspect, and perform major and minor alterations on any type of parachute for which he/she is rated.
2—Maintain, pack, inspect, and perform major and minor repairs on any type of parachute for which he/she is rated, and instruct other individuals to perform the same operations.
3—Pack and maintain (except for major repair) any type of parachute for which he/she is rated.
4—Maintain, pack, inspect, and perform major and minor repairs on any type of parachute for which he/she is rated.

2033. Who may supervise other individuals in the proper methods and procedures of packing, maintaining, and altering parachutes?

1—A certificated master parachute rigger who holds the appropriate ratings.
2—A person holding a current parachute instructor's certificate so long as he/she holds any one of the ratings.
3—A certificated senior parachute rigger who also holds a currently valid parachute instructor's certificate.
4—A certificated senior parachute rigger, but only for the types of parachutes for which he/she is rated.

2034. You have received your Senior Parachute Rigger Certificate within the last 30 days. If you are requested to pack a parachute under the privileges of your certificate, and you hold the proper rating,

1—you may pack the parachute because you have performed duties under your certificate for 30 days within the previous 12 months.
2—you may not pack the parachute because you have not performed duties under your certificate for 90 days within the previous 12 months.
3—you may pack the parachute because you have shown the FAA Administrator you are able to perform those duties.
4—you may not pack the parachute.

2035. According to FAR Part 65, which statement is an acceptable performance standard for senior parachute riggers?

1—Pack and alter any parachute if within the rigger's rating.
2—Perform duties under his/her certificate for at least 90 days within the preceding 12 months.
3—Pack a parachute using basic knowledge when the manufacturer's instruction is not handy.
4—Maintain packing records for a minimum of 1 year.

2036. Which of the following is a requirement a parachute rigger must meet in order to exercise the privileges of his/her certificate?

1—Performed duties under his/her certificate within the preceding 90 days.
2—Packed at least 20 parachutes within the preceding 90 days.
3—Shown the Administrator that he/she is able to perform those duties.
4—Satisfactorily packed not less than 100 parachutes within the preceding 12 months.

2037. A parachute rigger is required to present his/her certificate for inspection upon the request of

1—the owner of a parachute the rigger has packed.
2—any Federal, state, or local law enforcement officer.
3—a person holding a master parachute rigger rating.
4—a certificated pilot or flight instructor.

2038. Which of the following is privileged to perform alterations to the auxiliary canopy of a single harness dual parachute pack to be used for intentional jumping?

1—The owner of the parachute.
2—A certificated and appropriately rated master parachute rigger.
3—A certificated and appropriately rated senior parachute rigger.
4—A person holding the appropriate military parachute rigger rating.

2039.
(1) If a drop test is required to determine the serviceability of a canopy, a certificated senior parachute rigger may perform the drop test.
(2) A senior parachute rigger may replace pack opening elastic or spring bands.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2040.
(1) A senior parachute rigger may make minor harness repairs for the types of parachutes for which he/she is rated.
(2) A senior parachute rigger may alter the length of the bridle line that attaches the pilot chute to the canopy.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2041. From the list below, identify the repairs that cannot be approved by a senior parachute rigger.

A. Place suspension lines in proper sequence on a removable connector link.
B. Replace a damaged suspension line.
C. Replace a canopy panel.
D. Replace pack opening bands.
E. Replace D-rings on the parachute harness.
F. Replace pack cones or grommets.

1—A, C, F.
2—B, C, E.
3—A, B, D.
4—D, E, F.

2042. Many modern high-speed aircraft are equipped with drag chutes which are deployed upon landing to slow the aircraft. Which of the following may pack and rig this type parachute?

1—Any certificated parachute rigger.
2—A certificated mechanic with an airframe rating.
3—The pilot or owner of the aircraft.
4—A master parachute rigger.

2043. There are four Federal Aviation Regulations that the parachute rigger should be knowledgeable of. They are:

1—FAR Parts 63, 103, 135, and 145.
2—FAR Parts 65, 91, 105, and 149.
3—FAR Parts 63, 91, 105, and 149.
4—FAR Parts 65, 91, 135, and 147.

2044. Which of the following statements is true concerning the minimum facilities and equipment required for a parachute rigger to pack the main parachute of a single harness dual parachute pack to be used for intentional jumping?

1—The facilities and equipment requirements of FAR Part 65.127 do not apply in this instance.
2—The packing must be done in a parachute loft rated for general maintenance, minor repair, or canopy overhaul.
3—The packing may be done outside a properly equipped facility only by the person who intends to use the parachute.
4—The parachute rigger may supervise the packing outside a properly equipped facility, but may not actually pack the parachute, if it is to be used by another person.

2045. When packing the main parachute of a dual parachute pack to be used for intentional jumping, a certificated parachute rigger

1—must have performed duties under his/her certificate for at least 90 days within the preceding 12 months.
2—shall keep a record of each parachute packed for at least 2 years.
3—must perform the packing on a smooth-top table at least 3 feet wide by 40 feet long.
4—need not comply with the facilities, equipment, performance standards, records, and seal requirements of FAR Part 65.

2046. According to FAR Part 65, when exercising certificate privileges, a parachute rigger must have available suitable housing that is adequately heated, lighted, and ventilated

1—and is high enough to allow a parachute to be hung vertically for drying and airing.
2—and has provisions for adjusting and controlling the humidity.
3—for drying and airing parachutes.
4—and meets all the requirements specified in 1, 2, and 3 above.

2047. What facilities and equipment are required for a certificated parachute rigger to pack the main parachute of a dual parachute pack to be used by him/her for intentional jumping?

1—A smooth table at least 3 feet wide by 40 feet long.
2—Facilities for airing and drying.
3—Adequate housing facilities to perform his/her duties.
4—None.

2048. A certificated parachute rigger shall not exercise the privilege of his/her certificate and type ratings unless he/she understands the current manufacturer's instructions for the operation involved and

1—has satisfactorily packed not less than 20 parachutes within the preceding 90 days.
2—has satisfactorily packed not less than 100 parachutes within the preceding 12 months.
3—has performed duties under his/her certificate for at least 90 days within the preceding 12 months.
4—has performed duties under his/her certificate within the preceding 90 days.

2049. If requested to pack a parachute intended for emergency use, in a manner other than the manufacturer's approved method, what should a certificated rigger do?

1—Pack the parachute in the manner requested and drop test it to determine if the rate-of-opening is acceptable.
2—Request the local FAA inspector to approve the deviations from the manufacturer's approved method.
3—Pack the parachute in the manner requested and stencil the container "USE FOR INTENTIONAL JUMPING ONLY".
4—Refuse to pack the parachute in the manner requested.

2050. During the inspection of a parachute intended for emergency use, a certificated senior parachute rigger finds a canopy section which shows evidence of weakness or damage. What procedure should be followed?

1—Contact the local FAA inspector for disposition instructions.
2—Refuse to pack the parachute in that condition.
3—Pack the parachute; however, the record card should just be initialed.
4—Pack the parachute; however, a rejection tag should be placed in the record pocket.

2051. In the exercise of your privileges as a certificated parachute rigger, you may be requested to present your certificate for inspection. Regulations do not require you to comply with such a request from which of the following?

1—The Administrator of the Federal Aviation Administration.
2—An authorized representative of the Civil Aeronautics Board.
3—Any state or local law enforcement officer.
4—A certificated flight instructor.

2052. If a parachute rigger has not performed duties under his/her certificate within the last 12 months, he/she must

1—practice packing at least 5 parachutes before packing one for use.
2—review the manufacturer's instructions prior to packing a parachute for use.
3—pack a parachute of the appropriate type under the supervision of a master parachute rigger before exercising the privileges of his/her certificate.
4—show the Administrator that he/she is able to satisfactorily perform the duties for which he/she is rated.

2053. How long must a parachute rigger retain a record of parachute packing, maintenance, and alterations?

1—For at least 2 years after the disposal of the parachute.
2—Until notified by the FAA Inspector that he/she may dispose of them.
3—For at least 2 years after the date of record.
4—For at least 1 year after completion of the work.

2054. After packing a parachute, a rigger shall enter which of the following on the packing record attached to the parachute?

1—The date, the rigger's certificate number, and his/her seal symbol.
2—The rigger's certificate number and signature, the date and place of packing, and a notation of any defects found upon inspection.
3—The parachute retirement date, the packing date, and the rigger's signature.
4—The rigger's signature, the date, and the place of packing.

2055. An authorized person who performs alterations to one of the following is not required by regulation to keep a record of the alterations.

1—The main parachute of a single harness dual parachute pack.
2—The harness of a single harness dual parachute pack.
3—The auxiliary parachute of a single harness dual parachute pack.
4—The auxiliary parachute container of a single harness dual parachute pack.

2056. Regulations require each parachute rigger to keep a record of all packing, maintenance, and alterations performed or supervised. From the following, identify that which is not a required part of the record:

1—The date when and the place where the work was performed.
2—The parachute rigger's seal symbol.
3—The type, make, and serial number of the parachute.
4—The name and address of the parachute owner.

2057. A person who is authorized to perform alterations to parachutes must record which of the following alterations to a single harness dual parachute pack?

A. The main parachute.
B. The harness.
C. The auxiliary parachute.
D. The auxiliary parachute container.
E. The main parachute container.

1—A, B, C.
2—B, C, D.
3—C, D, E.
4—D, E, A.

2058. Federal Aviation Regulations require a parachute rigger to keep a record of the packing, maintenance, and alteration performed or supervised by him/her. Identify the items required to be entered in the record.

A. Retirement date of parachute.
B. Date parachute was manufactured.
C. Name and address of parachute owner.
D. Type, make, and serial number of the parachute.
E. Date when and place where the work was performed.

1—A, B, C.
2—B, C, D.
3—C, D, E.
4—D, E, A.

2059. After inserting the ripcord pins in a back-type parachute, the pack is sealed

1—by tying all of the pins with low tensile strength thread.
2—by tying the top pin with low tensile strength thread.
3—by tying the bottom and top pins with low tensile strength thread.
4—in accordance with the manufacturer's packing instructions.

2060.
(1) After packing a parachute intended for emergency use, a rigger is required to seal the pack.
(2) The identifying mark used to seal a pack is issued by the parachute manufacturer.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2061. Which of the following is not a purpose of the seal and safety tie?

1—Hold the pins in place.
2—For the protection of the rigger.
3—For the protection of the user.
4—To detect tampering.

2062.
(1) Worn or damaged harness webbing may be replaced by a certificated senior parachute rigger, providing the necessary equipment is available.
(2) The replacement of a damaged suspension line is a minor repair.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2063.
(1) The replacement of a damaged suspension line is a minor repair.
(2) A senior parachute rigger may make minor repairs to harnesses for the type of parachutes for which he/she is rated.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2064.
(1) The replacement of a damaged suspension line is a major repair.
(2) A master parachute rigger may make major repairs to harnesses for the type of parachutes for which he/she is rated.

Regarding trhe above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2065.
(1) A senior parachute rigger may alter the length of the bridle line that attaches the pilot chute to the apex of the canopy.
(2) Worn or damaged harness webbing may be replaced by a senior parachute rigger if the necessary equipment is available.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

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2066. How many of the following may alter the auxiliary parachute of a single harness dual parachute pack?

(1) A person holding an appropriate military rating.
(2) The owner of the parachute.
(3) The person who is to use the parachute.
(4) A certificated senior parachute rigger.

1—None.
2—One.
3—Two.
4—Four.

2067. Which of the following may alter the auxiliary parachute of a single harness dual parachute pack?

1—A person holding an appropriate military parachute rigger rating.
2—The owner of the parachute.
3—A certificated master parachute rigger.
4—The person who intends to use the parachute.

2068. Regulations require an authorized person who performs alterations to parachutes to keep a record of those alterations. Alterations to which of the following must be recorded?

A. Main parachute of a single harness dual parachute pack.
B. Harness of a single harness dual parachute pack.
C. Auxiliary parachute of a single harness dual parachute pack.
D. Auxiliary parachute container of a single harness dual parachute pack.
E. Main parachute container of a single harness dual parachute pack.

1—A, B, C.
2—B, C, D.
3—C, D, E.
4—D, E, A.

2069. Identify those persons who may alter the main parachute of a single harness dual parachute pack.

A. The manufacturer.
B. The owner of the parachute.
C. A senior parachute rigger.
D. A master parachute rigger.
E. A person holding an appropriate military rating.
F. A parachute loft with the appropriate rating.

1—A, B, C.
2—B, D, E.
3—C, E, F.
4—A, D, F.

2070. Who may maintain or alter the main parachute of a single harness dual parachute pack to be used for intentional jumping?

1—The person who is to use the parachute.
2—An appropriately certificated parachute rigger.
3—A person holding an appropriate military parachute rigger rating.
4—The owner of the parachute.

2071. Which statement applies regarding the packing of the main parachute of a dual parachute pack when the parachute is to be used for intentional jumping?

1—The facilities and equipment, performance standards, records, and seal attachment requirements of FAR Part 65 do not apply in this situation.
2—The parachute rigger must have performed duties under his certificate for at least 90 days within the preceding 12 months.
3—The parachute rigger must perform the packing on a smooth-top table at least 3 feet wide by 40 feet long.
4—The parachute rigger shall maintain a record of each parachute packed for at least 2 years.

2072. Which of the following may pack, maintain, or alter the harness, auxiliary parachute, or auxiliary parachute container of a single harness dual parachute pack to be used for intentional jumping?

1—An appropriately certificated and type-rated parachute rigger.
2—Any appropriately certificated parachute rigger.
3—Any appropriately certificated parachute rigger or the person who is to use the parachute.
4—Any person associated with use of the parachute for intentional jumping.

2073. Who may pack the main parachute of a single harness dual parachute pack to be used for intentional jumping?

1—Only an appropriately certificated and type-rated parachute rigger.
2—Only an appropriately certificated parachute rigger.
3—Any person associated with use of the parachute for intentional jumping.
4—Any certificated parachute rigger or the person who is to use the parachute.

2074. In relation to a dual parachute pack used for intentional jumping, which of the following may be accomplished by the person who intends to use the parachute?

1—Packing the main parachute.
2—Packing, maintaining, or altering the main parachute.
3—Packing the main parachute or the auxiliary parachute.
4—Packing the auxiliary parachute.

2075. Inspection of a parachute reveals a canopy section which shows evidence of weakness or damage. The parachute rigger conducting the inspection shall

1—pack the parachute, but withhold the record card.
2—pack the parachute in the normal manner, but place a rejection tag in a conspicuous location on the pack.
3—contact the local FAA inspector for disposition instructions.
4—refuse to pack the parachute.

2076.
(1) When sealing a pack, the lead seal is positioned on the safety-tie threads and compressed.
(2) Manufacturers' instructions require the replacement of all harness tacking each time a parachute is packed.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2077. A nylon back-type parachute intended for emergency use should be completely inspected and repacked at the end of

1—30 days.
2—60 days.
3—90 days.
4—120 days.

2078. When packing a parachute with harness attached, you find the canopy, suspension lines, and harness twisted and tangled. Which of the following should be accomplished first?

1—Determine that the canopy is right-side-out.
2—Remove the twists and tangles from the harness.
3—Remove the twists and tangles in the suspension lines nearest the canopy.
4—Remove the twists and tangles in the suspension lines nearest the harness.

2079. What action should be taken prior to opening a parachute pack that has been presented for repacking?

1—Thoroughly air and dry the canopy.
2—Perform a compressed pack test.
3—Inspect the exterior of the pack for signs of stains and wear points.
4—Have the parachute drop-tested to determine if the canopy material meets the strength requirements of TSO-C23b.

2080. When laying out a seat- or back-type parachute for packing, how should the harness be placed with reference to body position of the wearer?

1—Face up with the head toward the canopy.
2—Face up with the head away from the canopy.
3—Face down with the head toward the canopy.
4—Face down with the head away from the canopy.

2081. The first step in preparing a parachute for packing is to lay the parachute full length on a packing table and anchor the canopy apex using the

1—pilot chute connector loop.
2—tiedown loop.
3—vent line tie.
4—suspension lines.

2082. In preparation for packing a parachute, the vent hem must be checked to ensure that it is

1—open.
2—closed.
3—straight.
4—accordion-folded.

2083. A twist is an entanglement in which a line or group of lines pass

1—around the canopy.
2—through the harness.
3—around another group of lines.
4—through another group of lines.

2084. The free ends of the nylon cord used for tacking the lift web in Figure 1 are secured by a

1—clovehitch.
2—half-hitch and a square knot.
3—clovehitch and a surgeon's knot.
4—surgeon's knot and a single overhand lock knot.

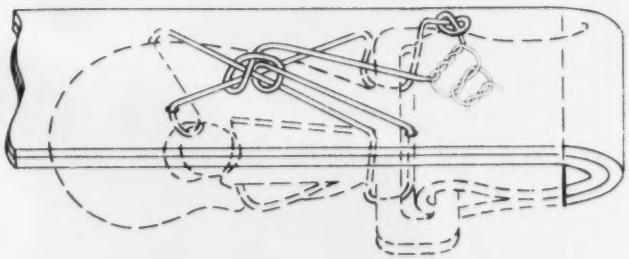

Figure 1

2085. When packing a parachute, you find the harness and suspension lines twisted and tangled. Which of the following should be accomplished first?

1—Remove the twists and tangles from the lines nearest the canopy.
2—Remove the twists and tangles from the lines nearest the harness.
3—Follow the suspension lines from connector link to connector link.
4—Remove the twists and tangles from the harness.

2086. After a parachute has been stretched to its full length on the packing table, the next step in the packing procedure is to

1—remove the twists from the harness and suspension lines.
2—attach the connector links to the tension hooks.
3—straighten the vent hem.
4—straighten and fold the canopy.

2087. The inspection of a parachute must be performed following the procedures

1—prescribed in Federal Aviation Regulations Part 65.
2—approved by the FAA Administrator or the parachute manufacturer.
3—outlined in Appendix A of FAR Part 43.
4—contained in TSO-C23b.

2088. What determines the service life of a canopy?

1—The number of times it has been used for jumping.
2—The tensile strength and porosity of the canopy material.
3—The number of times it has been packed.
4—The total number of repairs.

2089.
(1) A satisfactory method of checking a stained area of a parachute canopy for deterioration is to stretch the stained material between the fingers of both hands.
(2) When in doubt as to strength of a canopy, it is only possible to determine its serviceability by submitting it to a drop test.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2090. During the inspection of a parachute canopy, an area is found where a number of warp yarns are not properly interlaced. This condition is best described as

1—a thin place.
2—undrawn yarn.
3—a smash.
4—a float.

2091. Which defect in parachute canopy material is characterized by an abruptly thickened place in the cloth or a bunch of lint caught in the yarn?

1—A smash.
2—A float.
3—Undrawn yarn.
4—A slub or strip back.

2092. Which of the following checks cannot be made after the parachute has been packed and sealed?

1—Condition of vent collar.
2—Condition of safety thread on ripcord locking pin.
3—Security of ripcord housing.
4—Fit of ripcord grip in pocket.

2093. If you receive a parachute for packing and find it is not airworthy, what steps should be taken?

1—Pack the parachute, place a 6-inch red "X" on the container, and notify the owner.
2—Notify local FAA officials and dispose of the parachute as advised.
3—Pack the parachute and notify the FAA Administrator of the condition.
4—Do not pack the parachute.

2094. A ripcord pin that is slightly bent is

1—cause for corrective action.
2—of little concern because the safety hazard is negligible.
3—desired for easier pack closing.
4—desired for easier pack opening.

2095. Which areas of a parachute must be marked with the manufacturer's name, parachute model, and serial number?

1—Canopy and harness.
2—Pack and pilot chute.
3—Pack and canopy.
4—Canopy and pilot chute.

2096. Why is an acid stain more serious than any other type of stain on a parachute?

1—It cannot be detected until deterioration of the fabric occurs.
2—It can be treated only at a certificated parachute loft.
3—It can cause widespread contamination very quickly.
4—It is more serious because of all the above reasons.

2097. How can sunlight damage to white nylon canopy fabric be identified?

1—Moisten an area with distilled water and test using blue litmus paper.
2—When viewed under an ultraviolet light, the fabric will have a white fluorescence.
3—Sunlight damage is recognizable by its characteristic gray color.
4—Moisten an area with distilled water and test using red litmus paper.

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2098. Battery acid stains on the parachute containers and harnesses made of dark fabrics generally will appear

1—white.
2—red.
3—blue.
4—brown.

2099. Which procedure should be followed when testing parachute fabric for suspected acid stains?

1—Rub vigorously with an artgum eraser.
2—Stretch the material between the fingers.
3—Twist the fabric back and forth with the fingers.
4—Apply litmus paper moistened with distilled water.

2100. Why is it necessary to examine closely the pack opening spring bands for broken spring wire?

1—The pilot chute canopy may catch on a broken wire.
2—A deployment sleeve may not open.
3—The container may fail to open.
4—The ripcord cannot be pulled.

2101. A white crystalline substance on a parachute canopy or pack is evidence of a stain caused by

1—oil.
2—salt water.
3—gasoline.
4—acid.

2102. When packing a parachute, what determines the width of the canopy folds?

1—The width of the suspension line channels.
2—The diameter of the canopy.
3—The width of the pack.
4—The number of suspension line retainers.

2103. In the process of packing a parachute, the apex is generally released from the table prior to which of the following operations?

1—Folding the gores.
2—Accordion-folding the canopy.
3—Straightening the top lateral band.
4—Tacking the risers to the container (when necessary).

2104. When packing a parachute, after the right- and left-hand gores have been properly folded, both groups of gores should be folded once

1—over the center of the canopy.
2—toward the upper lateral band.
3—toward the lower lateral band.
4—over the riser attachment.

2105. When preparing a 28-foot canopy for folding, after the suspension lines have been equally divided between the left and right sides, where will the gore which contains the manufacturer's data be located if the canopy is laid out properly?

1—On the top between suspension lines 7 and 8.
2—On the bottom between suspension lines 13 and 14.
3—On the top between suspension lines 1 and 28.
4—On the bottom between suspension lines 14 and 15.

2106. When the parachute canopy is packed, material is allowed to protrude over the pack edges in order to assure

1—the gores are straight in the pack.
2—the canopy is creased properly in the pack.
3—complete filling out of the pack.
4—tightness when closing the pack.

2107. The stowage location for the first bight of suspension lines is determined by

1—location of the ripcord.
2—TSO-C23b.
3—length of risers.
4—packing instructions.

2108. If both right and left groups of gores have been folded properly, how many gores cross the suspension lines?

1—None.
2—One.
3—Two.
4—Four.

2109. When one or more of the suspension lines pass over the top of the canopy during deployment, it is referred to as

1—a streamer.
2—an overfold.
3—a line over.
4—a partial inversion.

2110. When using a suspension line hook to draw the suspension lines through a hesitator loop, the tip of the hook must always touch the

1—canopy.
2—lift web.
3—bottom of the container.
4—bights.

2111. What should be the position of the suspension lines during the canopy pleating process?

1—Raised about an inch above the table.
2—Raised to expose the inside of the canopy to the peak.
3—Held flat against the table with shot bags.
4—Held to one side and below the table level.

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2112. What is used to hold the canopy and suspension lines in place during packing?

1—Shot bags.
2—Tension hooks.
3—Fids.
4—Packing paddles.

2113. Select the tool used to make the folds in the canopy and to smooth out the pack.

1—Shot bags.
2—Tension hooks.
3—Packing paddles.
4—Fids.

2114. A shot bag is placed over the suspension lines during the gore folding process in order to

1—speed the packing of the bottom fold.
2—give tension on the apex.
3—hold the canopy folds in position.
4—keep the lines in their holders.

2115. How many gores should be folded at one time during the packing of a parachute?

1—One.
2—Two.
3—Three.
4—Four.

2116. To facilitate suspension line pullout, the lines should be stowed so that they extend through the retainer loop

1—only to the edge of loop.
2—not more than 1/2 inch.
3—according to manufacturer's instructions.
4—at least 2 inches.

2117. How is a back-type parachute pack sealed?

1—By tying the pin farthest from the grip, with low tensile strength thread, and attaching a lead seal.
2—By tying the top and bottom pins with low tensile strength thread, and attaching a lead seal.
3—By tying the pin nearest the grip with low tensile strength thread, and attaching a lead seal.
4—By tying either the top or center pin with low tensile strength thread, and attaching a lead seal.

2118. What is a seal symbol used for?

1—To seal a parachute pack.
2—To identify the parachute manufacturer.
3—To show if the pack has been opened.
4—To identify a certificated parachute rigger.

2119.
(1) After packing a parachute intended for emergency use, a certificated parachute rigger is required to seal each pack in accordance with the manufacturer's recommendations for that type of parachute.
(2) The identifying mark (seal symbol) used to seal a pack is issued by the manufacturer of the specific parachute.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2120. After packing a parachute, how does a certificated parachute rigger seal each pack?

1—The safety tie is sealed with the rigger's individual seal in accordance with the manufacturer's recommendations.
2—The safety tie is sealed with the certificated parachute loft seal in accordance with the manufacturer's recommendations.
3—The safety tie is sealed with the seal symbol issued by the parachute manufacturer.
4—The safety tie is sealed by installing the pack elastics in their respective positions.

2121.
(1) When sealing a pack, the lead seal should be positioned over the safety-tie threads and securely compressed.
(2) Manufacturers' instructions require the replacement of all harness tacking each time a parachute is packed.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2122. After closing the pack, the ripcord is inserted and the ends of the pack are smoothed out by

1—hand.
2—a packing paddle.
3—a packing hook.
4—the tension hook.

2123. At what point in the rigging of a parachute should the ripcord grip pocket be secured to the harness?

1—Just before the canopy is packed.
2—After the canopy is packed.
3—Before the pack is attached to the harness.
4—Just before the suspension lines are stowed.

2124. After inserting the ripcord pins in the locking cones on a back-type parachute, the pack is sealed in accordance with the manufacturer's instructions using low tensile strength thread to tie the

1—top pin.
2—center pin.
3—last pin.
4—bottom and top pins.

2125. The canopy vent performs how many of the following functions?

(1) Relieves internal pressure during opening.
(2) Helps dampen oscillation during descent.
(3) Provides a positive means of horizontal control during descent.

1—One.
2—Two.
3—Three.
4—None.

2126. What happens to the pilot chute when the main canopy has fully opened?

1—It remains inflated.
2—It detaches from the canopy.
3—It deflates and rests on the canopy.
4—It drops through the vent and hangs inside the canopy.

2127. A deployment bag is used

1—to protect the canopy after canopy deployment.
2—to delay canopy filling until suspension lines are deployed.
3—for static line deployment only.
4—to allow the canopy to fill before the suspension lines are deployed.

2128. Possible rupture of the canopy during opening is reduced by the

1—vent.
2—pilot chute.
3—drogue parachute.
4—bias construction of the canopy.

2129. How many of the following should be considered when properly preparing a parachute assembly for extended storage?

(1) Cleanliness of fabric components.
(2) Climatic conditions.
(3) Ventilation in storage room.
(4) Position of metal parts relative to fabric components.
(5) Amount of sunlight in storage room.

1—None.
2—Two.
3—Four.
4—Five.

2130. Which of the following would be a satisfactory method of storing a nylon parachute for an extended period of time (6 months)?

1—The parachute should be aired, packed, and stored in a parachute-carrying bag.
2—The parachute should be stored in a packed condition in a sealed cellophane bag.
3—The parachute should be stored in an unpacked condition in a dry place and protected from the sun's rays.
4—The pack should be opened and the canopy suspended from its apex in the drying tower.

2131. What is the purpose of naphthalene flakes when used in storage areas?

1—Provide rodent protection.
2—Provide mildew protection.
3—Help maintain proper humidity conditions.
4—Prevent static electricity, which is undesirable around cleaning fluids.

2132. A common term used in rigging parachutes is "chaining," which denotes the

1—method of temporarily gathering the suspension lines for convenience in handling.
2—weighting of the skirt hem when hanging a canopy for drying.
3—type of stitch sewn where the suspension lines attach to the riser links.
4—method of closing some packs.

2133. Which of the following chemicals should be used to prevent a parachute from mildewing while in storage?

1—Ammonia.
2—Camphor.
3—Naphthalene.
4—Methylene Chloride.

2134. How long should a parachute be aired prior to packing?

1—4 hours, provided the parachute is not damp or wet.
2—At least 8 hours.
3—At least 1 hour for each day since the parachute was last packed.
4—Until the parachute is thoroughly dry.

2135. After hanging a parachute in a loft, you find the suspension lines will not clear the floor. What is the recommended procedure to follow?

1—Lay excess length of lines on a table.
2—Chain the lines.
3—Tie up the lines.
4—Leave the excess length of lines in the retainer loops.

2136. Which operation should be performed first when fitting a parachute harness to the wearer?

1—Position the sling under the buttocks to form a seat.
2—Adjust the back straps.
3—Adjust the leg straps.
4—Place the chest strap approximately 4 inches below the chin and adjust the shoulder adapters.

2137. Select the true statement concerning the opening of a parachute.

1—The pilot chute opens the container when the ripcord is pulled.
2—Pack opening elastics or spring bands pull the pilot chute from within the pack.
3—The pull required to remove the ripcord pins may not exceed 22 pounds.
4—The pull required to remove the ripcord pins from their respective cones is equal to the total pull of all pack opening elastics or spring bands.

2138. What is meant by the phrase "opening shock"?

1—The force exerted on the pilot chute when it ejects from the pack.
2—The force exerted on the canopy after full inflation.
3—The force applied as the suspension lines pay out of their retainers.
4—The force exerted on the jumper when the canopy inflates.

2139. A line over is the term used when one or more suspension lines

1—are broken.
2—are twisted.
3—pass over the inflated canopy.
4—have dips.

2140. What type knot is generally used to fasten the pilot chute to the bridle line?

1—Half-hitch.
2—Bowline.
3—Clovehitch.
4—Fisherman's.

2141. Which of the following is the definition of "gore" as it applies to a parachute canopy?

1—A gore is a triangular portion of fabric bounded by any two suspension lines, the apex, and the skirt hem.
2—A gore is that portion of double thickness fabric which is used to reinforce the canopy vent area (apex).
3—A gore is a portion of fabric cut on a bias with the warp of the fabric running at a 45 degree angle to the centerline of the section.
4—A gore is that portion of double thickness fabric which is used to reinforce the canopy skirt hem.

2142. Which of the following statements is correct in reference to the construction of a gore as used in a standard type parachute canopy?

1—Each gore is composed of sections which are cut parallel to the centerline of the gore.
2—Each gore is a single piece of fabric cut parallel to the centerline of the gore.
3—Each gore is composed of sections cut at a 45 degree angle to the centerline of the gore.
4—Each gore is a single piece of fabric cut at a 45 degree angle to the centerline of the gore.

2143. Which of the following statements most accurately describes the radial seam used in a bias-constructed canopy?

1—The seam has two rows of stitching on each side of the channel that encloses the suspension line.
2—The seam is sewed with two rows of zigzag stitching.
3—The seam has a single row of stitching on each side of the channel that encloses the suspension line.
4—The seam is sewed with a single row of zigzag stitching.

2144. A rubber vent collar ring is capable of

1—holding the vent closed, especially during opening shock.
2—stretching to the diameter of the vent hem.
3—stretching to the skirt hem.
4—controlling horizontal direction while descending.

2145. Select the term which is applicable to the material threads indicated by "A" in the drawing of Figure 2.

1—Warp.
2—Fill.
3—Selvage.
4—Count.

2146. "Ripstop" is a term commonly used to describe

1—webbing material.
2—canopy material.
3—canvas material.
4—sewing machine stitching.

2147. Why is the slack left in the canopy between the attachment points of the suspension lines?

1—To facilitate packing.
2—To allow for opening shock.
3—To reduce strain on canopy during opening shock.
4—To prevent gore separations during opening shock.

2148. A bias-cut canopy is one in which

1—all seams are biased.
2—the canopy hem and vent hem are parallel to the selvage edge of the material in the gore.
3—the threads in the panel segments are 45 degrees to the centerline of the gore.
4—the lines are attached to the harness on the bias.

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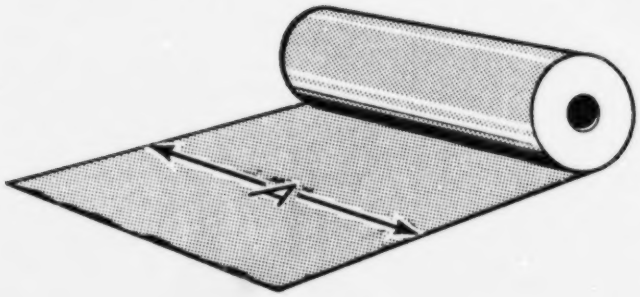

Figure 2

2149. "Porosity," as used in parachute terminology, is expressed in terms of the

1—rate of airflow.
2—direction of cloth weave.
3—rate of descent.
4—weight of cloth per square yard.

2150. What is one advantage of bias construction of parachute canopies?

1—Provides minimum strength and elasticity.
2—Lessens the weight of the parachute.
3—Decreases the bulk of the parachute.
4—Provides maximum strength and elasticity.

2151. Which of the stitchings in Figure 3 illustrates a correctly folded and stitched diagonal seam? (Shown in cross section.)

1—A.
2—B.
3—C.
4—D.

2152. Nylon tubular webbing is commonly used in which of the following parachute parts?

1—Ripcord housing.
2—Suspension line stowage bands.
3—Canopy skirt hem.
4—Harness straps.

2153. A canopy constructed so that the warp and filler threads of the cloth run 45 degrees to the centerline of the gore is called

1—angular construction.
2—radial construction.
3—diagonal construction.
4—bias construction.

2154. Of several characteristics of canopy material, which should be considered the most important based on safety considerations?

1—Durability.
2—Tensile strength.
3—Elasticity.
4—Permeability.

2155. Which of the following identifies the major components of a parachute?

1—Pilot chute, canopy, suspension lines, lift webs, and risers.
2—Panels, upper lateral band, lower lateral band, suspension lines, and risers.
3—Harness, canopy, container or pack, pilot chute, and suspension lines.
4—Upper lateral band, lower lateral band, vent collar, canopy, and suspension lines.

2156. Which specification is applicable to parachutes?

1—TSO-C23b.
2—TSO-C83a.
3—TSO-C22a.
4—None of the above.

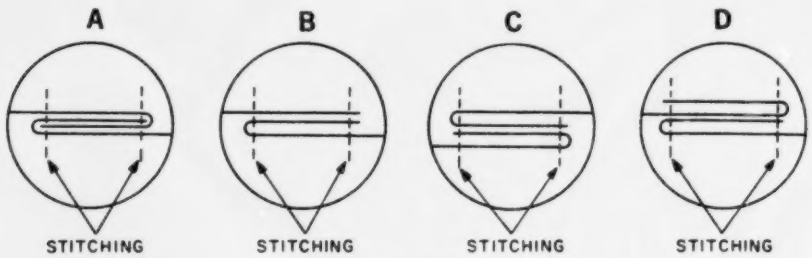

Figure 3

2157.
(1) Each parachute outfit shall be provided with at least an inner pocket for keeping a record card.
(2) The inner pocket shall be located in the center of the packed container tray or frame.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2158. What precaution must be observed when replacing a broken or missing eye on a container?

1—Replace the eye and the pack opening band hook.
2—Sew the eye to a reinforced area of the container.
3—Replace the eyes adjacent to the broken or missing one.
4—Locate the eyes near the container binding or a seam.

2159. How is the outside covering of the parachute container provided with the necessary elasticity?

1—By constructing it of nylon fabric.
2—By joining all seams using a zigzag stitch.
3—By cutting the covering in one piece on the bias.
4—By a combination of all the above.

2160. Why is it necessary that the open end of pack opening elastic or spring band hooks should face the pack?

1—The hook and eye is easier to assemble in this manner.
2—The hook may slip out of the eye when the pack opens unless assembled in this manner.
3—The pilot chute canopy or suspension lines have less chance of catching on hooks.
4—It does not make any difference which way hooks face.

2161. The pull required to cause the positive and quick operation of the pack opening device shall not exceed

1—10 pounds.
2—12 pounds.
3—18 pounds.
4—22 pounds.

2162. How far must the ripcord pins normally be pulled to unlock the pack?

1—1/2 inch.
2—1-1/4 inches.
3—3 inches.
4—2 inches.

2163. Before installation on a parachute assembly, a ripcord must withstand a minimum load of at least

1—300 pounds.
2—22 pounds.
3—150 pounds.
4—11 pounds.

2164. Normally, ripcord cables are manufactured of

1—Monel metal wire.
2—corrosion-resistant steel.
3—galvanized carbon steel cable.
4—corrosion-resistant piano wire.

2165. A bent grommet that fits around the cone in the pack-opening mechanism will most probably

1—damage the canopy material.
2—prevent the operation of the pack-opening bands.
3—snag the ripcord cable.
4—affect the ripcord pull value.

2166. Give one reason for properly attaching the ripcord housing to the parachute pack.

1—It is required by TSO-C23b.
2—To allow for carrying the parachute.
3—To increase the ripcord pull force.
4—Helps retain the locking pins in their cones.

2167. What are the principal functions of the ripcord housing?

1—Hold the pack cover and pilot chute flap in place.
2—Protect the ripcord from accidental release and keep it at the proper tension.
3—Make the ripcord easier to pull and hold it in position after pack opening.
4—Hold the pack intact and retain the pack cover when the ripcord is removed for inspection.

2168. Which group of suspension lines are connected to the inboard end of the riser connector links (28-foot canopy)?

1—Lines 1, 14, 15, and 28.
2—Lines 1, 6, 12, and 28.
3—Lines 1, 2, 3, and 4.
4—Lines 1, 7, 13, and 20.

2169. What technique is used to assure uniformity in the length of nylon suspension lines for a given model parachute during their manufacture and/or replacement?

1—All suspension lines shall be marked while under no load to show points of attachment.
2—All suspension lines shall be marked while under equal tension to show points of attachment.
3—With no load on suspension lines, mark the points of attachment, then cut the line core approximately 2 inches shorter than the sleeve.
4—With no load on suspension lines, mark the points of attachment, then cut the line core approximately 2 inches longer than the sleeve.

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2170. Select the statement which correctly refers to the assembly of the suspension lines and canopy (standard type parachute).

1—The suspension lines are enclosed in channels which are produced by the diagonal seam stitching.
2—The suspension lines are enclosed in channels which are produced by the radial seam stitching, and the entire length of each line is lockstitched to the canopy.
3—The suspension lines are enclosed in channels which are produced by the diagonal seam stitching, and each line is lockstitched to the canopy vent ring only.
4—The suspension lines are enclosed in channels which are produced by the radial seam stitching.

2171. On some parachutes, the suspension lines are secured to the connector links using a

1—clovehitch and a half-hitch.
2—bowline and a clovehitch.
3—bowline and a half-hitch.
4—clovehitch and a surgeon's knot.

2172. Suspension lines are attached directly to the

1—harness web.
2—container.
3—riser links.
4—vent hem.

2173. Where are the suspension lines attached to the gores to prevent the canopy from slipping along the lines?

1—Along the radial seams.
2—Along the diagonal seams.
3—Down the center of each gore.
4—Along both the radial and diagonal seams.

2174. Select the knot in Figure 4 which shows a correct method for attaching suspension lines to a connector link. (Knots are shown expanded for clarity.)

1—A.
2—B.
3—C.
4—D.

2175. Why is zigzag stitching used to complete the attachment of suspension lines to the riser links?

1—It is stronger than other types of stitching.
2—It does not require special equipment to produce.
3—It allows for more stitches per linear inch than other types of stitching.
4—It allows elongation of the suspension line without overstressing the thread.

2176. The suspension or load-line channel is formed by the

1—radial seam stitching.
2—lateral seam stitching.
3—diagonal seam stitching.
4—bias construction of the canopy.

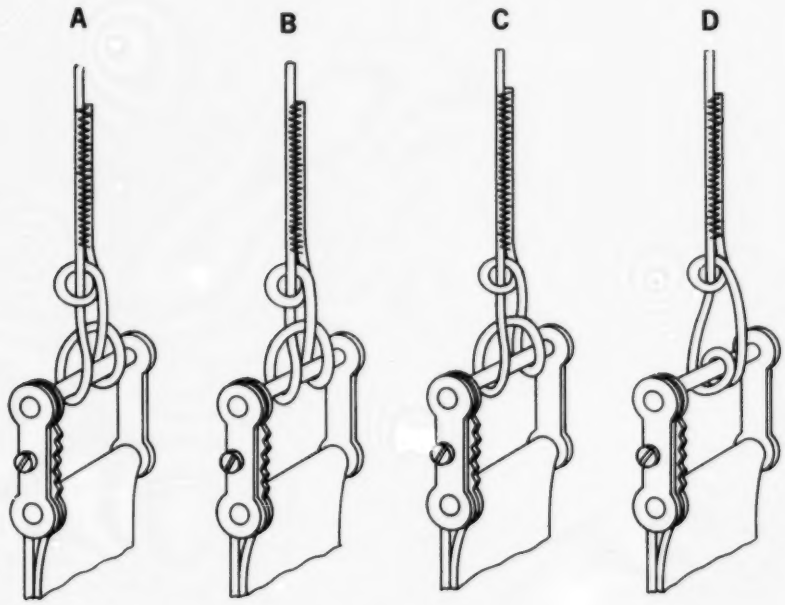

Figure 4

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2177. Select the drawing from Figure 5 that shows the correct rotation of the suspension lines on the connector links of a 24–foot, four–link canopy.

1—A.
2—B.
3—C.
4—D.

2178. Who may install Capewell fasteners (for a main back pack) on a single harness dual parachute pack?

1—Master parachute rigger.
2—Certificated aircraft repair station.
3—Military rated parachute rigger.
4—Person using the parachute for intentional jumping.

2179. In the event that only one connector snap is attached to the harness D–ring, what prevents the canopy from collapsing?

1—The V–ring.
2—The connector links.
3—The suspension lines.
4—The cross connector strap.

2180. What prevents an auxiliary pack canopy from collapsing if one connector snap is not secured or pulls out of the harness "D–ring" when the canopy is deployed?

1—The cross connector strap.
2—The container frame.
3—The connector links.
4—The breast strap.

2181. To meet Technical Standard Order requirements for FAA approval, all fittings on a parachute must be

1—able to withstand their full–rated load without yielding.
2—made of corrosion–resistant steel.
3—smooth to avoid damaging the canopy.
4—plated to resist corrosion.

2182. Which statement describes the use, description, and type of material of grommets used in parachutes?

1—Used as reinforcement around holes for mounting clamp type fasteners.
2—Used as patches for small holes, can be round, square or oblong, and are made of fabric.
3—Used as reinforcement around holes, are round, and are made of metal.
4—Used between the button and stud of snap fasteners, are round, and are made of metal.

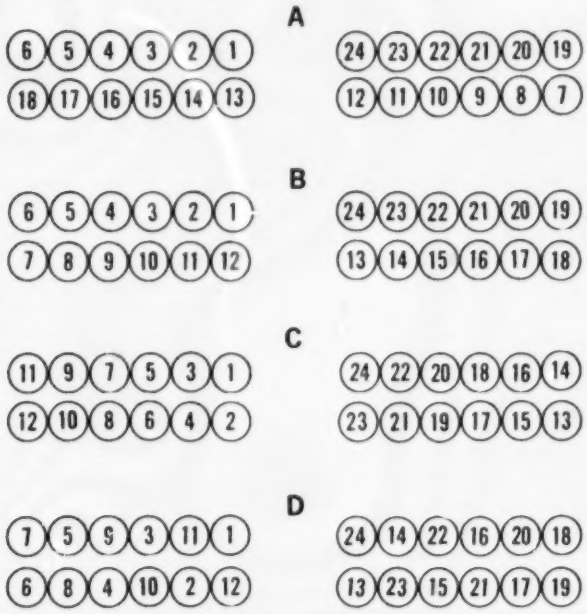

Figure 5

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2183. Which of the fittings illustrated in Figure 6 has the greatest tensile strength?

1—A.
2—B.
3—C.
4—D.

2184. Which of the following one-word definitions best describes a grommet?

1—Button.
2—Washer.
3—Fastener.
4—Reinforcement.

2185.
(1) Low-speed parachutes must be marked as such on the outside pack.
(2) Auxiliary parachutes are required to have an inner pocket for keeping a record card.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2186. Which parts of a parachute are required to be marked with the manufacturer's name, parachute model, and serial number?

1—Pack and canopy.
2—Canopy and harness.
3—Pilot chute and canopy.
4—Harness, pack, and canopy.

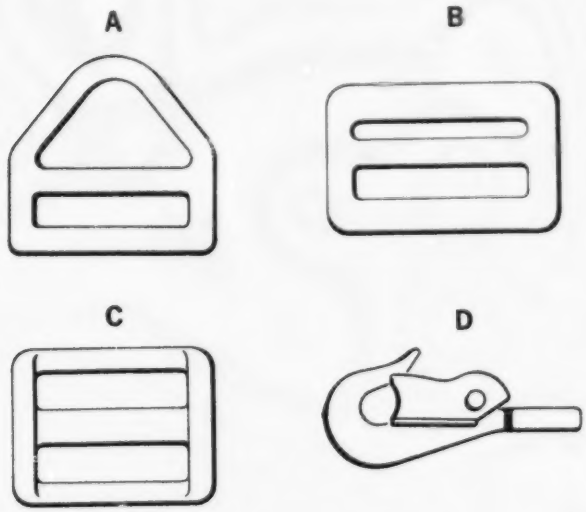

Figure 6

2187. Technical Standard Order-C23b provides specifications for which of the following types of parachutes?

1—Low-speed and standard.
2—Low-speed and sport.
3—Low-speed and high-speed.
4—High-speed and sport.

2188. A standard type parachute to be certified under TSO-C23b must withstand a minimum shock load of

1—3,000 pounds.
2—5,000 pounds.
3—8,000 pounds.
4—10,000 pounds.

2189.
(1) Filler yarns of parachute canopy materials run crosswise of the cloth as it comes from the loom.
(2) When applying a patch, the patch material filler yarns must be matched with those of the canopy.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2190.
(1) Dyeing of a canopy is a minor alteration.
(2) Replacement of a suspension line is a minor repair.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2191. Any repairs to a parachute must be done in accordance with procedures

1—approved by the Administrator or the manufacturer of the parachute.
2—contained in TSO-C23b.
3—contained in FAR Part 149.
4—contained in FAR Part 65.

2192. What does the Federal Aviation Regulations consider to be the service life of a parachute?

1—As long as it is in condition for safe operation.
2—4 years.
3—5 years.
4—7 years.

2193. Which defect in a canopy would most likely require a minor repair?

1—Mispicks.
2—Floats or skips.
3—Slugs or slubs.
4—Thread separations.

2194. Additional strength is given to a patch by

1—securing it to a seam.
2—anchoring it to a suspension line.
3—applying a filler patch in the trimmed hole.
4—doing all of the above.

2195. What is the reason for matching the weave of the patch material with that of the canopy being repaired?

1—To provide a more pleasing appearance.
2—So that the permeability of the canopy is unchanged.
3—To assure that the patch elasticity is the same as the canopy material.
4—To prevent causing any difficulty in folding the canopy during packing procedure.

2196.
(1) Dyeing of a canopy is a major alteration.
(2) Replacement of a suspension line is a minor repair.

Regarding the above statements, which of the following is true.

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2197. If a tear continued across a radial seam of an auxiliary pack canopy, who is authorized to make the repair?

1—A master parachute rigger.
2—A certificated parachute loft with an appropriate rating.
3—The manufacturer of the parachute.
4—All of the above.

2198. Which stitch is generally used to sew a tear in a canopy prior to applying a patch?

1—Basting stitch.
2—Baseball stitch.
3—Overthrow stitch.
4—Buttonhole stitch.

2199. Which stitching shown in Figure 7 illustrates a correctly folded and stitched radial seam? (Shown in cross section.)

1—A.
2—B.
3—C.
4—D.

2200. If evidence of "yarn slippage" is found during the inspection of a parachute canopy, what procedure should be followed?

1—Patch the affected area.
2—Remove the affected area and determine the degree of deterioration by pull testing in a tensile strength tester.
3—To determine the extent of the defect, further separate the dislodged threads by pulling the affected material between the fingers of both hands.
4—This minor defect does not require repair.

2201. The raw edges of a canopy patch are turned under a minimum of

1—3/8 inch.
2—1/2 inch.
3—3/4 inch.
4—1 inch.

2202. Warp threads are those that run

1—the length of a seam.
2—the length of a bolt of material.
3—across the width of a bolt of material.
4—diagonally on herringbone reinforcement tape.

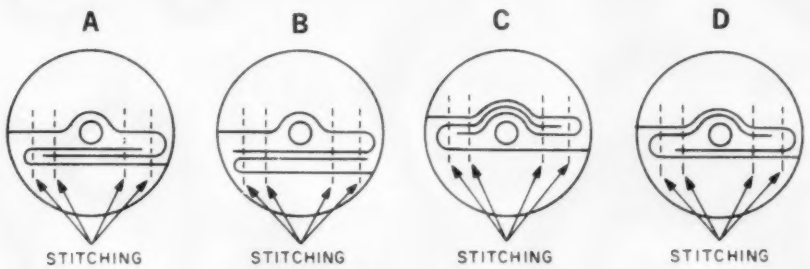

Figure 7

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2203. When repairing a broken stitch in a canopy seam, what action should be taken?

1—Overstitch for at least 1 inch on each end.
2—Reinforce the seam by applying a patch.
3—Sew back and forth across the ends of the broken stitch.
4—Anchor the ends of the broken thread using fabric cement.

2204. Which statement relative to double patching a parachute canopy is true?

1—The inside patch should be larger and applied first.
2—The outside patch should be larger and applied first.
3—The inside patch should be smaller and applied first.
4—The outside patch should be smaller and applied first.

2205. When replacing a panel in a parachute canopy, which of the following would facilitate the installation of the new panel?

1—Separate the stitches around the panel by force.
2—Open the radial seams 6 inches beyond the end of the panel.
3—Completely remove the two suspension lines bordering the panel.
4—Carefully snip the boundary stitches of the old panel.

2206. Break tacking should be tied off with what kind of knot?

1—A bowline knot.
2—A surgeon's knot and a locking knot.
3—A square knot and a bowline knot.
4—A square knot and a half-hitch.

2207. Identify the stitching in Figure 8 which illustrates the correct stitching pattern for attaching the connector link to the lift web.

1—A.
2—B.
3—C.
4—D.

2208. The loose ends of thread used in machine sewing of a parachute harness should be secured. What is the proper method?

1—Backstitch at least 1/2 inch.
2—Backstitch at least 4 full inches.
3—Sear with open flame.
4—Tie off with surgeon's knot.

2209. When replacing loose eyes on a parachute container, each stitching point should be sewn with

1—six turns of a double 3-cord nylon thread.
2—six turns of a single 6-cord nylon thread.
3—five turns of a single 6-cord nylon thread.
4—five turns of a single 3-cord nylon thread.

2210. Which tool is generally used when replacing pack opening elastics or spring bands?

1—A packing paddle.
2—A packing hook.
3—A bodkin.
4—An awl.

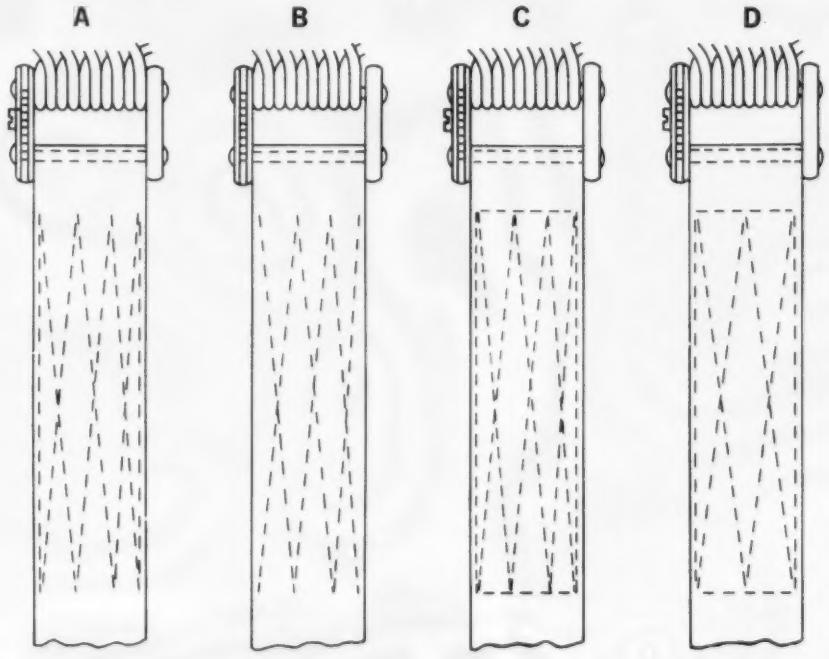

Figure 8

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2211. What process is used on nylon webbing ends to prevent them from fraying?

1—Whipping.
2—Waxing.
3—Searing.
4—Sewing.

2212. Identify the knots in the order shown in Figure 9.

1—(A) square; (B) clovehitch; (C) lark's head; and (D) bowline.
2—(A) surgeon's; (B) lark's head; (C) clovehitch; and (D) bowline.
3—(A) surgeon's; (B) bowline; (C) lark's head; and (D) clovehitch.
4—(A) square; (B) bowline; (C) clovehitch; and (D) lark's head.

2213. A rough locking cone surface can be smoothed by

1—rubbing with emery cloth.
2—scraping the cone with a knife.
3—grinding the cone using an emery wheel.
4—dressing the cone with No. 2 sandpaper.

2214. When replacing a torn out pack grommet, excess thickness in the patched area may cause

1—improper deployment of the pilot chute.
2—additional damage to the material at the grommet area.
3—binding of the locking pin in the cone.
4—the cone to protrude too far through the grommet.

2215. When repairing a broken stitch in a canopy seam, what action should be taken?

1—Anchor the ends of the broken thread using fabric cement.
2—Sew back and forth across the ends of the broken stitch.
3—Reinforce the seam by applying a patch.
4—Overstitch by at least one inch.

2216. Figure 10 is a cross section of a series of lockstitches sewn by machine. Which action will aid in correcting the fault shown?

1—Decrease bobbin thread tension and increase needle thread tension.
2—Increase bobbin thread tension and decrease needle thread tension.
3—Increase presser foot pressure and decrease feed dog pressure.
4—Decrease stitch length and increase needle thread tension.

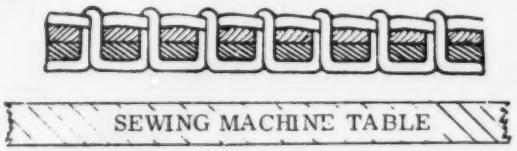

Figure 10

2217. Which of the seams illustrated in Figure 11 is a French fell seam?

1—A.
2—B.
3—C.
4—D.

2218. Darning is a technique that may be used for which of the following purposes?

1—To attach the ripcord pocket to the harness.
2—To attach the excess length of harness riser strap to the container.
3—To repair minor defects in the canopy.
4—To make major repairs to canvas containers.

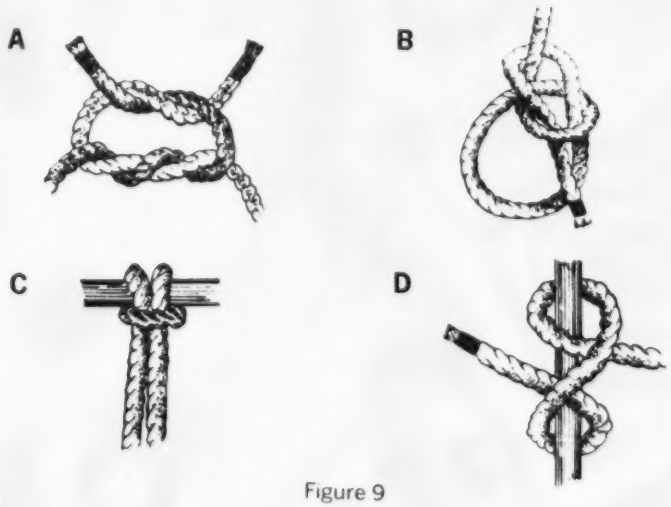

Figure 9

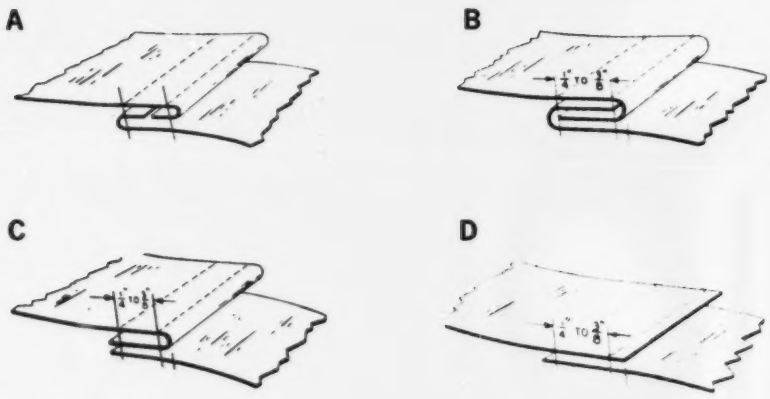

Figure 11

2219. When starting to sew a seam with a lockstitch sewing machine, the operator should hold

1—both threads for the first two stitches.
2—the lower thread for the first two stitches.
3—the bobbin thread for the first four stitches.
4—the upper thread for the first two stitches.

2220. What size thread is used to sew nylon canopy radial seams when making a repair?

1—One size larger than original.
2—Size B.
3—One size smaller than original.
4—Same as original.

2221. Which statement is correct concerning sewing and stitching as applied to parachute repair?

1—Seams joined by zigzag stitching are capable of great elongation without creating excessive tensile stress of the thread itself.
2—All thread must be coated with beeswax prior to use.
3—Use 5-cord linen thread for all hand sewing.
4—Use 6-cord linen thread for all machine sewing.

2222. What determines the proper size sewing machine needle to use in repairing a parachute?

1—The speed of the machine.
2—The machine being used.
3—The size of hole in the feed dog.
4—The thread size and material being used.

2223. What two types of stitching are normally used in the manufacture of parachutes?

1—Lockstitch and chainstitch.
2—Chainstitch and zigzag stitch.
3—Chainstitch and blindstitch.
4—Lockstitch and zigzag stitch.

2224. Which of the seams illustrated in Figure 12 is an English fell seam? (Cross section shown.)

1—A.
2—B.
3—C.
4—D.

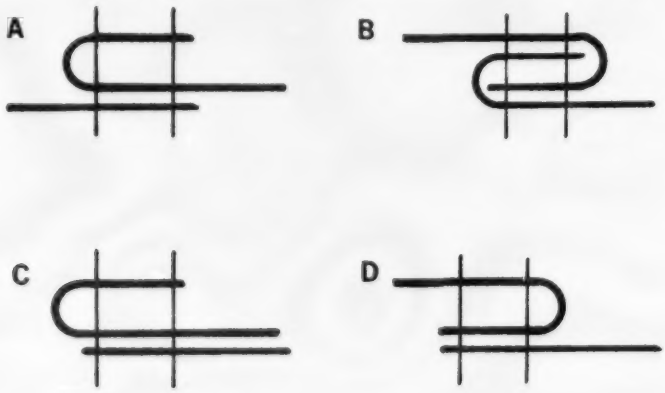

Figure 12

2225. Which of the following has the least effect on the overall strength of a sewn seam?

1—Type of stitch and type of thread.
2—Stitching pattern and number of stitches.
3—Type of seam used and seam construction.
4—Moisture content of the fabric at the time of sewing.

2226. Why should the elasticity of a seam be greater than that of the material it joins?

1—To minimize abrasion and wear of the thread from contact with other parts of the parachute assembly.
2—To prevent snagging of the thread used in constructing the seam.
3—So that the material will support its share of the expected load.
4—To assure balanced seam construction that has the neatness in appearance to match adjacent seams.

2227. Which type of stitch is used most frequently in the repair and maintenance of parachutes?

1—Lockstitch.
2—Chainstitch.
3—Overedge stitch.
4—Darning stitch.

2228. The elasticity of a properly constructed seam or stitching depends upon which of the following?

1—Thread strength and elasticity.
2—Thread tension and stitch type.
3—Seam type and thread elasticity.
4—Stitch type and thread elasticity.

2229.
(1) The elasticity of a seam or stitching should be slightly less than the material which it joins.
(2) The elasticity of a seam or stitching depends upon the stitch type and the thread elasticity.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2230. Identify the type of stitch formed when two needle threads pass through the material in the same perforation from opposite directions without interlacing or interlooping.

1—Double locked stitch.
2—Lockstitch.
3—Chainstitch.
4—Running stitch.

2231. Which type of stitch should be used for sewing a tear in a parachute canopy in preparation for patching?

1—Chainstitch.
2—Backstitch.
3—Baseball stitch.
4—Darning stitch.

2232. How many rows of stitches extend the entire length of the radial seam on a continuous line canopy?

1—Two.
2—Three.
3—Four.
4—Six.

2233. What affects the strength of a sewed seam?

1—Thread tension and stitches per inch.
2—Type of stitch and thread strength.
3—Seam efficiency of the material and the type of seam.
4—All of the above.

2234. Which component of the sewing machine used for parachute repair work prevents the thread from becoming tangled around the needle as it travels through the material?

1—The sewing hook.
2—The needle bar.
3—The thread takeup lever.
4—The thread controller spring.

2235. A properly adjusted sewing machine will produce a stitch that locks

1—in the center of the uppermost piece of material.
2—on the top surface of the materials being joined.
3—on the bottom surface of the materials being joined.
4—in the center of the thickness of the materials being joined.

2236.
(1) A sewing machine will not feed properly if the feed dog is set too low.
(2) Too little pressure on the presser foot of a sewing machine will result in staggered stitches.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2237. If the bobbin is threaded incorrectly, what is the most likely malfunction to occur while operating a sewing machine?

1—Staggered stitches.
2—Skipped stitches.
3—Breakage of the lower thread.
4—Breakage of the upper thread.

2238. Figure 13 is a cross section of a series of lockstitches sewn by machine. What action will help correct the fault shown?

1—Decrease bobbin thread tension.
2—Decrease needle thread tension.
3—Decrease stitch length.
4—Increase presser foot tension.

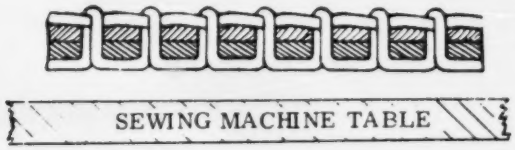

Figure 13

2239. Figure 14 is a cross section of a series of machine sewn stitches. The type of stitch is

1—a zigzag stitch.
2—a lockstitch.
3—a chainstitch.
4—an overhand stitch.

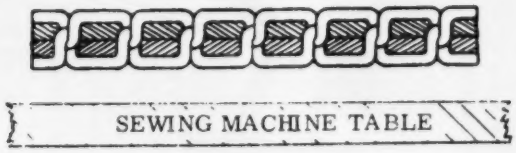

Figure 14

2240. Figure 15 shows a cross section of a series of lockstitches sewn by machine. What action will help correct the fault shown?

1—Decrease bobbin thread tension.
2—Decrease needle thread tension.
3—Decrease stitch spacing.
4—Increase presser foot tension.

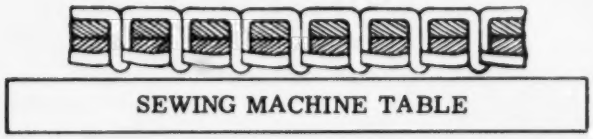

Figure 15

2241.
(1) When machine sewing, skipped stitches can result if the needle is bent.
(2) Excessive friction between the thread and the needle eye could cause skipped stitches.

Regarding the above statements, which of the following is true?

1—Only No. 1 is true.
2—Only No. 2 is true.
3—Both No. 1 and No. 2 are true.
4—Neither No. 1 nor No. 2 is true.

2242. When operating a sewing machine, which of the following can occur if the feed dog is positioned too high?

1—Staggered stitches.
2—The cloth will pucker.
3—The sewing machine will jam.
4—Stitches will be unset on top of the cloth.

2243. Which of the following is used to determine the size of the sewing machine needle to be used for a particular job?

1—Size of the hole in the feed dog.
2—Speed of the machine.
3—Length of the seam to be sewn.
4—Thread size and type of cloth.

2244. What is one result of having too much thread in the bobbin when machine sewing?

1—Sluggish operation of the machine will result.
2—Staggered stitching.
3—Improper meshing of the lockstitch.
4—Lower thread breakage.

2245. If a ripcord pin is slightly burred, what procedure should be followed?

1—The burr should be peened until it is flush with the adjacent surface.
2—The entire ripcord assembly must be replaced.
3—The ripcord pin should be carefully smoothed and polished with fine emery cloth.
4—The ripcord pin should be replaced.

2246. Which of the following repairs may be made by a senior parachute rigger?

1—Replace a damaged ripcord.
2—Sew a lift web to the links.
3—Sew a tear that has crossed a radial seam.
4—Repair a permanent twist in a chest strap.

2247. Which hazard is associated with chrome plating of parachute hardware?

1—Hydrogen embrittlement of the metal parts.
2—Slippage of the metal parts due to increased coefficient of friction.
3—Weakening of the hardware due to the annealing effect of the plating process.
4—None of the above.

2248. When replacing a damaged ripcord with a serviceable one, which of the following requirements must be met?

1—Functionally test the parachute for proper operation.
2—Check the pin spacing of the ripcord to see if it matches the cone spacing on the pack.
3—Replace the ripcord housing with a serviceable assembly.
4—None of the above.

2249. A rough locking cone surface can be smoothed by

1—grinding the cone using an emery wheel.
2—scraping the cone with a knife.
3—rubbing the cone with emery cloth.
4—dressing the cone with No. 2 sandpaper.

2250. Removal of a grommet is acomplished principally by which operation?

1—Filing.
2—Prying.
3—Crimping.
4—Drilling.

2251. When necessary to clean a large area of a canopy to remove stains and dirt, which of the following cleaning methods should be used?

1—Submerge the canopy in a cleaning mixture and rub the material together until the stain is removed.
2—Scrub the stained area using a soft bristle brush saturated with clean, fresh water.
3—Machine wash the entire canopy.
4—Submerge the stained area in a cleaning mixture and agitate the liquid until the stain is removed.

2252. Which of the following methods should be used to dry a parachute canopy that has been rinsed or soaked in clear water?

1—Dry the canopy in an electric dryer.
2—Wring the canopy thoroughly and hang it to dry.
3—Hang the canopy and allow it to drip dry.
4—Spread the canopy in a sunlighted area to shorten the drying time.

2253. Which method is commonly used to remove grease and oil stains from parachute canopies?

1—Apply an approved solvent.
2—Wash with castile soap and water.
3—Cut out the stained area and apply a patch.
4—Replace the entire panel that contains the stain.

2254. Which method is commonly used to remove mildew stain from a parachute canopy?

1—Wash with naphtha.
2—Wash with mild soap and water.
3—Cut out the stained area and apply a patch.
4—Replace the entire panel that contains the stain.

2255. Select the correct statement concerning the cleaning of nylon parachute harness which has become soiled due to handling.

1—Wash with a 2 percent solution of phenol (carbolic acid).
2—Use a warm water, mild soap solution.
3—Clean the affected areas with a petroleum-base solvent.
4—Dip a clean cloth into a warm solution of hydrogen peroxide and rub the affected areas lightly.

2256. How can you detect the presence of acid on parachute fabrics?

1—By sight.
2—By smelling the stained area.
3—By the use of litmus paper.
4—By drop testing the parachute.

2257. What is normally used to remove blood stains from parachutes?

1—Ammonia.
2—Dry cleaning solvent.
3—Naphtha.
4—Cold water.

2258. Which statement applies to the care of a nylon parachute that has fallen into a lake or river of fresh water?

1—Hang until thoroughly dried and repack.
2—Rinse in a mild soap and water solution to remove dirt and hang in the sun to dry.
3—Twist the fabric parts gently by hand to remove excess water and hang until dry.
4—Rinse in clean fresh water, hang, and allow to drip dry.

2259. What is used to neutralize the destructive effects of battery acid on parachutes?

1—Ammonia.
2—Acetone.
3—Warm water.
4—Dry cleaning solvent.

2260. Parachute containers which have been contaminated with electrolyte from a lead-acid battery can be neutralized using a solution of

1—ammonia and distilled water.
2—potassium hydroxide and boric acid.
3—diluted sulphuric acid.
4—acetone and warm water.

2261. Perspiration stains on a parachute must be treated in the same manner as contamination from

1—acid.
2—grease.
3—mildew.
4—salt water.

2262. What procedures should be followed to obtain field approval for installation of an automatic opening device on an auxiliary parachute pack?

1—Have a master parachute rigger install the automatic opener and sign the packing card.
2—Contact an FAA Aviation Safety Inspector.
3—Have the manufacturer of the device install it on the auxiliary pack and sign the packing card.
4—Have any certificated parachute rigger install the device on the auxiliary pack and sign the packing card.

2263. In accordance with Federal Aviation Regulations, who may alter the main parachute of a single harness dual parachute pack?

1—A senior parachute rigger.
2—The person who uses the parachute for intentional jumping.
3—Any military rated parachute rigger.
4—A master parachute rigger.

2264. What effect can be expected if the apex vent of a canopy is altered and completely closed?

1—Increased opening shock and possible blowout in high-pressure area of canopy.
2—Decreased opening shock and possible blowout in low-pressure area of canopy.
3—Increased opening shock and possible decreased canopy oscillation.
4—Decreased opening shock and possible increased canopy oscillation.

APPENDIX 2

The abbreviations listed below are used to identify the reference associated with each test question listed in Appendix 1.

AC — Advisory Circular
FAR — Federal Aviation Regulations
MPI — Manufacturer's Packing Instructions
NAV — NAVPERS 10358D
NPR — Parachute Rigger 3 and 2, Vol. 1
NVA — NAVAIR 13–1–6.2
PPC — Pioneer Parachute Company Packing Instructions, PA–QAC–28
PPM — Poynter Parachute Manual
PRC — Parachute Rigging Course by Poynter
TSO — Technical Standard Order

Item	*Reference*	*Item*	*Reference*	*Item*	*Reference*	*Item*	*Reference*
2001.	FAR 65	**2029.**	FAR 65	**2057.**	FAR 65	**2085.**	PPM
2002.	FAR 65	**2030.**	FAR 65	**2058.**	FAR 65	**2086.**	PPM
2003.	FAR 65	**2031.**	FAR 65	**2059.**	FAR 65	**2087.**	FAR 65
2004.	FAR 65	**2032.**	FAR 65	**2060.**	FAR 65	**2088.**	PPM
2005.	FAR 65	**2033.**	FAR 65	**2061.**	PPM	**2089.**	PPM
2006.	FAR 65	**2034.**	FAR 65	**2062.**	FAR 65	**2090.**	PPM
2007.	FAR 65	**2035.**	FAR 65	**2063.**	FAR 65	**2091.**	PPM
2008.	FAR 65	**2036.**	FAR 65	**2064.**	FAR 65	**2092.**	PPM
2009.	FAR 65	**2037.**	FAR 65	**2065.**	FAR 65	**2093.**	FAR 65
2010.	FAR 65	**2038.**	FAR 65	**2066.**	FAR 65	**2094.**	PPM
2011.	FAR 65	**2039.**	FAR 149	**2067.**	FAR 65	**2095.**	TSO
2012.	FAR 65	**2040.**	FAR 65	**2068.**	FAR 65	**2096.**	PPM
2013.	FAR 65	**2041.**	AC 105–2A	**2069.**	FAR 65	**2097.**	PPM
2014.	FAR 65	**2042.**	FAR 65	**2070.**	FAR 65	**2098.**	PPM
2015.	FAR 65	**2043.**	FAR 65	**2071.**	FAR 65	**2099.**	PPM
2016.	FAR 65	**2044.**	FAR 65	**2072.**	FAR 65	**2100.**	PPM
2017.	FAR 65	**2045.**	FAR 65	**2073.**	FAR 65	**2101.**	PPM
2018.	FAR 65	**2046.**	FAR 65	**2074.**	FAR 65	**2102.**	PPM
2019.	FAR 65	**2047.**	FAR 65	**2075.**	FAR 65	**2103.**	PPM
2020.	FAR 65	**2048.**	FAR 65	**2076.**	PPM	**2104.**	PPM
2021.	FAR 65	**2049.**	FAR 65	**2077.**	FAR 91	**2105.**	PPM
2022.	FAR 65	**2050.**	FAR 65	**2078.**	PPM	**2106.**	PPM
2023.	FAR 65	**2051.**	FAR 65	**2079.**	PPM	**2107.**	MPI
2024.	FAR 65	**2052.**	FAR 65	**2080.**	PPM	**2108.**	PPM
2025.	FAR 65	**2053.**	FAR 65	**2081.**	PPM	**2109.**	PPM
2026.	FAR 65	**2054.**	FAR 65	**2082.**	NVA	**2110.**	NAV
2027.	PPM	**2055.**	FAR 65	**2083.**	PPC	**2111.**	NAV
2028.	FAR 65	**2056.**	FAR 65	**2084.**	PPM	**2112.**	PPM

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Item	Reference	Item	Reference	Item	Reference	Item	Reference
2113.	PPM	2151.	PPM	2189.	NPR	2227.	NAV
2114.	PPM	2152.	NAV	2190.	AC 105–2A	2228.	PPM
2115.	PPM	2153.	PPM	2191.	FAR 65	2229.	PPM
2116.	PPM	2154.	NAV	2192.	FAR 65	2230.	PPM
2117.	PPM	2155.	NAV	2193.	PPM	2231.	NAV
2118.	FAR 65	2156.	TSO	2194.	NAV	2232.	PPM
2119.	FAR 65	2157.	TSO	2195.	PPM	2233.	NAV
2120.	FAR 65	2158.	PPM	2196.	AC 105–2A	2234.	NAV
2121.	FAR 65	2159.	NAV	2197.	FAR 65	2235.	PPM
2122.	PPM	2160.	PPM	2198.	PPM	2236.	PPM
2123.	PPM	2161.	TSO	2199.	PPM	2237.	PPM
2124.	PPM	2162.	PPM	2200.	PPM	2238.	NAV
2125.	PPM	2163.	TSO	2201.	PPM	2239.	PPM
2126.	NAV	2164.	PPM	2202.	PPM	2240.	NAV
2127.	PPM	2165.	PPM	2203.	PPM	2241.	PPM
2128.	PPM	2166.	PPM	2204.	NAV	2242.	PPM
2129.	PPM	2167.	NAV	2205.	PPM	2243.	PPM
2130.	PPM	2168.	NAV	2206.	PPM	2244.	PPM
2131.	PPM	2169.	NAV	2207.	PPM	2245.	PPM
2132.	PPM	2170.	NAV	2208.	NAV	2246.	AC 105–2A
2133.	PPM	2171.	NAV	2209.	PPM	2247.	PPM
2134.	FAR 65	2172.	NAV	2210.	PPM	2248.	PPM
2135.	PPM	2173.	NAV	2211.	PPM	2249.	PPM
2136.	PPM	2174.	NAV	2212.	NAV	2250.	NAV
2137.	TSO	2175.	NAV	2213.	PPM	2251.	PPM
2138.	PPM	2176.	PPM	2214.	NAV	2252.	PPM
2139.	PPM	2177.	NAV	2215.	PPM	2253.	PPM
2140.	PPM	2178.	PPM	2216.	NAV	2254.	PPM
2141.	PPM	2179.	PPM	2217.	PPM	2255.	PPM
2142.	NAV	2180.	PPM	2218.	PPM	2256.	PPM
2143.	PPM	2181.	TSO	2219.	PPM	2257.	PPM
2144.	PPM	2182.	PPM	2220.	PPM	2258.	PPM
2145.	PPM	2183.	NAV	2221.	PPM	2259.	PPM
2146.	PPM	2184.	NAV	2222.	PPM	2260.	PPM
2147.	PRC	2185.	TSO	2223.	PPM	2261.	PPM
2148.	NAV	2186.	TSO	2224.	PPM	2262.	FAR 65
2149.	PPM	2187.	TSO	2225.	PPM	2263.	FAR 65
2150.	PPM	2188.	TSO	2226.	PPM	2264.	PPM

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